

WHAT IS CLAIMED IS:

1. A method for requesting retransmission of a failing RLP (Radio Link Protocol) frame in a communications system that transmits a plurality of RLP frames, each frame having a frame sequence field for a frame sequence number, a data field for data, the
 5 method comprising the steps of:

receiving a next RLP frame and storing the frame sequence number of the failing RLP frame in the frame sequence field of said next RLP frame; and

transmitting a retransmission request frame containing the frame sequence number of said failing RLP frame and an identifier different from said frame sequence number, whereby the retransmitted RLP frame includes said identifier in the frame sequence field.

2. An apparatus for requesting retransmission of a failing RLP frame in a
 12 communications system that transmits a plurality of RLP frames, each frame having a frame sequence field for a frame sequence number, a data field for data, and a retransmission field for retransmission, comprising:

a list for storing the frame sequence number of the failing RLP frame when receiving an RLP frame subsequent to the failing RLP frame; and

a controller for generating a retransmission request frame containing the frame sequence number of said failing RLP frame and an identifier different from said frame sequence number, wherein the retransmitted RLP frame stores said identifier in the frame sequence field.

3. The apparatus as claimed in Claim 2, further comprising a register for storing
 said identifier and said frame sequence number.

5 4. A method for retransmitting a failing RLP frame in a communications system that transmits a plurality of RLP frames, each frame having a frame sequence field for a frame sequence number, a data field for data, and a retransmission field for retransmission, comprising the steps of:

receiving a retransmission request frame containing a frame sequence number of the failing RLP frame, and an identifier different from said frame sequence number; and

transmitting a retransmitted RLP frame with said identifier stored in said frame sequence field.

15 5. A method for retransmitting an RLP frame in a communications system that transmits a plurality of RLP frames, each frame having a frame sequence field for a frame sequence number, a data field for data, and a retransmission field for retransmission, comprising the steps of:

storing said plurality of transmitted RLP frames and the respective frame
 20 sequence numbers of said transmitted RLP frames in a storage device;

detecting the frame sequence number of a failing RLP frame in response to a retransmission request for requesting retransmission of said failing RLP frame with an identifier different from said frame sequence number stored in said frame sequence

field; and

transmitting a retransmitted RLP frame with said identifier assigned to the frame sequence field of the detected frame sequence number, and retransmission indicated in said retransmission field.

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6./11 An apparatus for retransmitting a failing RLP frame in a communications system that transmits a plurality of RLP frames, each frame having a frame sequence field for a frame sequence number, a data field for data, and a retransmission field for retransmission, comprising:

a forward resequencing buffer for storing the data of said transmitted RLP frames, and the respective frame sequence numbers of said transmitted RLP frames for retransmission; and

a controller for generating a retransmitted RLP frame with an identifier assigned to said frame sequence field, and retransmission indicated in said retransmission field by detecting the RLP frame identified by the frame sequence number of said failing RLP frame in response to a retransmission request frame containing the frame sequence number of said failing RLP frame and said identifier.

7./12 The apparatus as claimed in Claim 6, further comprising a transmission request queue for storing the frame sequence number of said failing RLP frame and said identifier contained in said retransmission request frame.

8. An apparatus for transmitting and receiving RLP data in a mobile

communications system, comprising:

a transmitter for respectively assigning frame sequence numbers to a plurality of transmitted RLP frames; and

a receiver for requesting said transmitter to retransmit a failing RLP frame detected by the frame sequence number using an identifier assigned to said failing RLP frame instead of said frame sequence number.

9. The apparatus as claimed in Claim 8, further comprising:

a list for storing the frame sequence number of said failing RLP frame when receiving the RLP frame next to said failing RLP frame; and

a controller for generating a retransmission request frame containing the frame sequence number of said failing RLP frame, and an identifier different from said frame sequence number to be assigned to a retransmitted RLP frame.

10. The apparatus as claimed in Claim 9, further comprising a register for storing said identifier.

11. The apparatus as claimed in Claim 8, further comprising:

a forward resequencing buffer for storing the data of said transmitted RLP frames, and the respective frame sequence numbers of said transmitted RLP frames for retransmission; and

a controller for generating a retransmitted RLP frame with an identifier assigned to said frame sequence field, and retransmission indicated in said retransmission field

by detecting the RLP frame identified by the frame sequence number of said failing RLP frame in response to a retransmission request frame containing the frame sequence number of said failing RLP frame and said identifier.

5 12. The apparatus as claimed in Claim 11, further comprising a transmission request queue for storing the frame sequence number of said failing RLP frame and said identifier contained in said retransmission request frame.

13. A method for requesting retransmission of a failing RLP (Radio Link Protocol) frame in a communication system for transmitting a plurality of RLP frames, each having a frame sequence filed for a frame sequence number and a data field for data, comprising the steps of:

receiving the next RLP frame subsequent to the failing RLP frame and storing a sequence number of the first RLP frame among the failing RLP frames; and

generating and transmitting a retransmission request frame containing the sequence number of the first RLP frame.